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**1987 U.S. ARMY NURSE MEMBERSHIP,
ACCESSION AND LOSS PROFILES:
VOLUME II, ACTIVE DUTY**

George W. Thomas
Kathryn Kocher
Benjamin J. Roberts

June 1989

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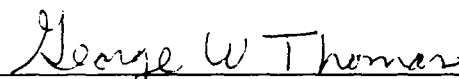## NAVAL POSTGRADUATE SCHOOL
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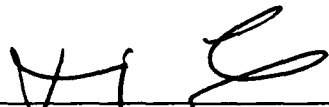Reproduction of all or part of this report is authorized.

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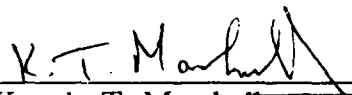
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The purpose of this report is to provide profiles of Active Duty Army nurses to aid in developing strategies and policies for recruiting, managing, and retaining registered nurses in the face of a national nursing shortage. Data from Defense Manpower Data Center personnel files were used to describe Regular Army (RA) nurse officers as of September 30, 1987 and transactions information was used to identify those who entered and those who left Active service in FY 1987. Profiled characteristics include: age, gender, race-ethnic group, marital status, number of dependents, highest educational level, rank, age at service entry, length of service, and nursing specialty. Comparisons of RA nurses and USAR nurses are made on the basis of Volume I of this series of reports.

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1987 U.S. ARMY NURSE MEMBERSHIP, ACCESSION AND LOSS PROFILES: VOLUME II, ACTIVE DUTY

BY

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JUNE 1989

PREPARED BY

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I. INTRODUCTION

A. Objectives and Background

The goal of this research is to examine the characteristics of nurse officers who were serving on Active Duty as of September 30, 1987, and also to identify and describe those nurses who entered and those who left Active service in fiscal year 1987. By understanding characteristics both of the stock (membership) of current nurses and the flow (accessions and losses), Army Nurse Corps managers can better understand the dynamics of the nurse population and gain insights for policies to meet the Army's need for nurses.

Background information on the national nursing shortage and the labor market for registered nurses may be found in Volume I of this series of reports (Thomas, et al. 1988). Detailed bibliographic references are available in Recruiting and Retaining Army Nurses: An Annotated Bibliography (Roberts and Kocher, 1988), and a discussion of issues relevant to the supply of Army nurses appears in The Reserve Intentions of Active Duty Army Nurses (Kocher and Thomas, 1988).

B. Data and Methodology

The data used to conduct this research were obtained from the Defense Manpower Data Center (DMDC), and were derived from the Master and Loss files maintained by that organization. Figure 1 lists the data elements selected for use in developing Regular Army (RA) nurse profiles.

The Defense Manpower Data Center obtains U.S. Army personnel data from the SIDPERS databases at the Total Army Personnel Agency (TAPA). Three files which were obtained for nurse officers are described in the sections which follow:

1

MILITARY CHARACTERISTICS

Total Active Federal Military Service
DOD Primary Occupation Group
Paygrade
Source of Commission
Accession Date
Loss Date (if applicable)
Loss Designator (if applicable)
Transaction Date (for losses and accessions)
Age at Service Entry

DEMOGRAPHIC CHARACTERISTICS

Education Certification
State (home address)
Date of Birth
Age (checked against date of birth)
Race-Ethnic Group
Marital Status
Number of Dependents
Gender

Figure 1

Data Elements Selected From the
Masters and Transactions Files

1.   Nurse Membership File

This file contains information on each nurse member of the Regular Army as of September 30, 1987. The nurse membership file contains 4,548 records.

2.   Nurse Accessions File

This file contains information on 535 nurses who joined the u.S. Army during fiscal year 1987. Accessions data were obtained from transactions information.

3.   Nurse Losses File

This file contains records for 469 Army nurses who left Active Duty during fiscal year 1987.

Both the accessions and losses data sets are probably missing an unknown number of records of officers who entered or left Active service during fiscal year 1987. This is the result of occasional delays in reporting officer transactions to SIDPERS. We have tried to obtain some of these missing records by extracting the appropriate records from the DMDC transaction files for the first three quarters of fiscal year 1988. (Fiscal year 1987 loss and accession transactions which experience reporting delays are reported in later year DMDC transaction files, rather than in DMDC transaction files for fiscal year 1987). However, it is impossible to know for certain the number of missing transactions remaining for fiscal year 1987.

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II. FY 1987 PROFILES OF RA NURSE MEMBERS

This chapter profiles several important demographic and military characteristics of Regular Army nurses (RA) at the end of fiscal year 1987. Since the US Army Recruiting Command must recruit nurses from the civilian sector, we include selected demographic characteristics for employed registered nurses from a 1984 sample survey of 25,294 registered nurses by the US Department of Health and Human Services (US Department of Health and Human Services, 1986).

A. Age

The mean age for the RA nurses for whom we had age data was 33.3 years. The youngest nurse was 19 and the oldest was 60. There was a slight negative skew in the age data, as the distribution extended further towards younger ages. The vast majority of nurses were between the ages of 22 and 41 (slightly less than 90% were in this range). Table 1 shows the frequency distribution for age, grouped by increments of ten years. Civilian registered nurses had a mean age of 39 years. There were more nurses both under 35 years and over 55 years of age among this civilian population than among RA nurses.

Table 1
Age, RA and Civilian Nurses[a], September 30, 1987
(percent)

Age Group (Years)	RA Nurses (n=4,548)	Civilian Nurses[a] (n=25,294)
Under 25	13.0	5.8
25-34	42.8	36.9
35-44	38.2	26.8
45-54	5.6	17.7
55+	0.4	12.8
Total	100.0	100.0
Missing	(0)	(400)

[a] November 1984

B. Gender

Table 2 shows the gender distribution for RA nurses as well as for civilian RNs. For RA nurses, 73.7% were female, while 26.3% were male. Only 3.3% of the employed registered nurse population was male in 1984. Hence, male nurses are about eight times more prevalent in the RA than in the civilian sector.

Table 2
Gender, RA and Civilian Nurses[a], September 30, 1987
(percent)

Gender	RA Nurses (n=4,548)	Civilian Nurses[a] (n=25,294)
Male	26.3	3.3
Female	73.7	96.7
Total	100.0	100.0
Missing	(0)	(0)

[a] November 1984

C. Marital Status

Table 3 indicates that 33.6% of RA nurses were single (never married), 9% were previously married, and slightly less than 58% were married. Employed civilian sector nurses show a somewhat different marital status distribution with over 69% married and only about 16% single (never married).

D. Number of Dependents

Table 4 shows the frequency distribution for number of dependents, not including the service member (spouses are included in most cases). Almost one-half (46.5%) of the RA nurses had no dependents. This information was not available for civilian sector nurses in a compatible format.

Table 3
Marital Status, RA and Civilian Nurses[a], September 30, 1987
(percent)

Marital Status	RA Nurses (n=4,546)	Civilian Nurses[a] (n=25,294)
Single, never married	33.6	15.7
Single, previously married	9.0	15.0
Married	57.4	69.3
Total	100.0	100.0
Missing	(2)	(241)

[a]November 1984

Table 4
Number of Dependents, not Including Member, RA Nurses
September 30, 1987
(percent)

Number of Dependents	(n=4,547)
0	46.5
1	18.6
2	13.7
3	13.8
4 or more	7.4
Total	100.0
Missing	(1)

E. Race-Ethnic Status

Table 5 indicates the race-ethnic distributions for RA and civilian nurses. Compared with the civilian sector, there are slightly fewer hispanic nurses in the RA. Hispanics accounted for 1.4% of RA nurses, compared with 1.6% of employed civilian nurses. Blacks represented 11.7% of the RA nurses. Blacks comprised less than 5% of the population of civilian RNs.

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Table 5
Race-Ethnic Group, RA and Civilian Nurses[a]
September 30, 1987
(percent)

Race-Ethnic Group	RA Nurses (n=4,548)	Civilian Nurses[a] (n=25,294)
White	84.5	90.4
Black	11.7	4.6
Hispanic	1.4	1.6
Other	2.4	3.4
Total	100.0	100.0
Missing	(0)	(288)

[a] November 1984

F.   Highest Educational Level

Nurses in the RA have a much higher level of education than does the overall population of registered nurses. Unfortunately, 5.5% of the RA nurse membership did not have a record for educational level. Table 6 shows the distribution of highest education level for nurses in the RA membership file for whom a specific highest educational level was recorded. The majority of these nurses had at least a Bachelor's degree, (94.1%). These data imply that if recruiting goals target the Bachelor's degree market, then the market is reduced to about one-third of employed civilian registered nurses.

G.   Years of Service

The majority (64.3%) of RA nurses had served ten years or less on Active Duty, as shown in Table 7. Those with 11 to 20 years of service comprised about 30% of the total membership.

Table 6
Highest Educational Level, RA and Civilian Nurses
September 30, 1987
(percent)

Level	RA Nurses (n=4,296)	Civilian Nurses[a] (n=25,294)
Diploma/other	0.1	41.9
Associate's Degree	0.3	25.2
Bachelor's Degree	71.4	26.8
Master's Degree	27.7	5.8
Doctorate	0.5	0.3
Total	100.0	100.0
Missing	(252)	(119)

[a] November 1984

Table 7
Years of Active Duty Service, RA Nurses
September 30, 1987
(percent)

Years of Service	(n=4,548)
0-4	36.7
5-10	27.6
11-15	15.0
16-20	14.7
More than 20	6.0
Total	100.0
Missing	(0)

H.   Rank

Table 8 shows the rank distribution for RA nurses as of 30 September 1987. A total of 36.8% were Lieutenants, while slightly over 50% held the rank of Captain or Major. Nearly 12% had attained the rank of Lieutenant Colonel or Colonel.

Table 8
Rank, RA Nurses, September 30, 1987
(percent)

Rank	(n=4,548)
2LT	15.9
1LT	20.9
CPT	29.5
MAJ	21.8
LTC	9.7
COL	2.2
Total	100.0
Missing	(0)

I.   Age at Service Entry

A majority (61.0%) of RA nurses entered military service between the ages of 19 and 25 as shown in Table 9.   Another 30.8% were between 26 and 34 at service entry.

Table 9
Age at Service Entry, RA Nurses, September 30, 1987
(percent)

Age Group (Years)	(n=4,548)
18 and under	3.8
19 - 21	15.0
22 - 25	46.0
26 - 29	17.4
30 - 34	13.4
35 and over	4.4
Total	100.0
Missing	(0)

J.   Nursing Specialty

The RA nurse membership data set contained information about specific nursing specialty in the form of primary MOS.   Table 10 shows the numbers of RA

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nurses in each of the nursing specialties. About 48% of RA nurse officers were medical-surgical nurses. Nurse anesthetists and operating room nurses are extensively utilized in military settings and their supply is very limited. These two specialties made up 8.0% and 5.4% of all RA nurses, respectively.

Table 10
Nursing Specialty, RA Nurses, September 30, 1987
(percent)

Specialty (Primary MOS)	(n=4,548)
66A Administrator	6.6
66B Community Health	3.2
66C Psychiatric	2.9
66D Pediatrics	7.0
66E Operating Room	8.0
66F Nurse Anesthetist	5.4
66G OB-Gyn	6.1
66H Medical-Surgical	47.8
66J Clinical	13.1
Total	100.0
Missing	(0)

III. PROFILES OF RA NURSE ACCESSIONS AND LOSSES IN FY87

This chapter profiles demographic and military characteristics both of the nurses who entered the Regular Army Nurse Corps and those who left during fiscal year 1987. Frequency distributions are given for the same characteristics profiled in the previous membership chapter. A comparison of these "flow" values with the "stock" values in Chapter II will provide a measure of changes in the makeup of the Active Duty membership of the Army Nurse Corps.

A. Age

The mean age for the Regular Army nurses who entered Active service during fiscal year 1987 was 26.4 years. The youngest RA nurse accession was 21 years old, while the oldest was 43. There was a pronounced negative skew in the age data, as the distribution extended towards younger ages. Approximately 75% of nurse accessions were between the ages of 21 and 29. Table 11 shows the frequency distribution for age, grouped by increments of ten years.

Table 11
Age, RA Nurse Accessions and Losses, FY 1987
(percent)

Age Group (Years)	Accessions (n=535)	Losses (n=469)
Under 25	53.8	3.2
25 - 34	36.7	51.0
35 - 44	9.5	33.6
45 - 54	0.0	9.9
55+	0.0	2.3
Total	100.0	100.0
Missing	(0)	(0)

The mean age for nurses who left the RA during fiscal year 1987 was 34.8

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years. The youngest RA nurse loss was 23 and the oldest was 57. There was a noticeable negative skew in the age data, as the distribution extended towards younger ages. The vast majority of nurse losses were between the ages of 23 and 40 (slightly more than 75% were in this range).

B.   Gender

RA accessions during FY87 were 20.2% male and 79.8% female, as shown in Table 12. Of the nurse losses to the RA during FY87, 73.1% were female, while 26.9% were male.

Table 12
Gender, RA Nurse Accessions and Losses, FY 1987
(percent)

Gender	Accessions (n=535)	Losses (n=469)
Male	20.2	26.9
Female	79.8	73.1
Total	100.0	100.0
Missing	(0)	(0)

C.   Marital Status

Table 13 indicates that over 62% of nurse accessions to the RA were single (never married) and 31.6% were married, while only 6.2% were single (previously married). Almost 60% of RA nurse losses were married, and only about 30% were single (never married).

Table 13
Marital Status, RA Nurse Accessions and Losses, FY 1987
(percent)

Marital Status	Accessions (n=534)	Losses (n=469)
Single, never married	62.2	29.9
Single, previously married	6.2	10.4
Married	31.6	59.7
Total	100.0	100.0
Missing	(1)	(0)

D.   Number of Dependents

Table 14 shows the frequency distribution for number of dependents for RA nurse accessions, not including the service member. Over 70% of RA nurse accessions had no dependents, while only 2.3% of RA accessions had four or more dependents. RA losses who had no dependents comprised 42.5% of these departing nurses. Only 8.7% of RA losses had four or more dependents.

Table 14
Number of Dependents, not Including Member, RA
Nurse Accessions and Losses, FY 1987
(percent)

Number of Dependents	Accessions (n=534)	Losses (n=469)
0	70.6	42.5
1	14.6	23.0
2	6.7	12.6
3	5.8	13.2
4 or more	2.3	8.7
Total	100.0	100.0
Missing	(1)	(0)

E.   Race-Ethnic Status

The race-ethnic distribution of RA nurse accessions is shown in Table 15.
Blacks represented 12.3% of RA accessions compared to .9% for hispanics. The
race-ethnic distribution for nurse losses shows almost identical figures as for
accessions. Blacks represented 12.2%, while hispanics made up .9% of nurse
losses to the RA.

Table 15
Race-Ethnic Group, RA Nurse Accessions and Losses, FY 1987
(percent)

Race-Ethnic Group	Accessions (n=535)	Losses (n=469)
White	83.9	84.4
Black	12.3	12.2
Hispanic	0.9	0.9
Other	2.8	2.6
Total	100.0	100.0
Missing	(0)	(0)

F.   Highest Educational Level

Table 16 shows the distribution of highest educational level for RA
accessions. Unfortunately, slightly over 44% of the records for RA nurse
accessions for whom data were available did not have valid information on highest
degree. Over 99% of RA nurse accessions had at least a Bachelor's degree. Only
15% of RA nurse losses had less than a Bachelor's degree, while holders of
Bachelor's and Master's degrees accounted for over 98% of losses.

G.   Years of Service

Table 17 shows the length of service distribution for nurse losses from

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the RA for FY1987. Almost 36% of these exiting nurses had served less than five years. Another 31.6% were leaving after five to 10 years. About 14% had completed 20 or more years of service.

Table 16
Highest Educational Level, RA Nurse Accessions and Losses, FY 1987
(percent)

Level	Accessions (n=299)	Losses (n=461)
Associate's Degree (or less)	0.3	1.5
Bachelor's Degree	98.7	76.2
Master's Degree	1.0	22.1
Doctorate	0.0	0.2
Total	100.0	100.0
Missing	(236)	(8)

Table 17
Years of Commissioned Service, RA Nurse Losses, FY 1987
(percent)

Years of Service	(n=469)
0 - 4	35.7
5 - 10	31.6
11 - 15	10.7
16 - 20	6.8
20 or more	14.1
Total	100.0
Missing	(0)

H.   Rank

Table 18 shows the rank distribution for nurses who entered and those who left the RA during fiscal year 1987. Almost 88% of RA accessions were Second Lieutenants. The largest number of RA losses were Captains (39.2%). This group was closely followed by First Lieutenants who comprised 31.3% of losses.

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Table 18
Rank, RA Nurse Accessions and Losses, FY 1987
(percent)

Rank	Accessions (n=535)	Losses (n=469)
2LT	87.5	2.8
1LT	7.1	31.3
CPT	4.9	39.2
MAJ	0.6	12.4
LTC	0.0	11.9
COL	0.0	2.3
Total	100.0	100.0
Missing	(0)	(0)

I.   Age at Entry

The age at service entry distribution for nurse accessions and losses is shown in Table 19. Nurse losses display a different pattern of entry age compared to accessions. Over 14% of losses entered the service when 21 or younger while only 6% of accessions were this young at entry. The largest percentage of entrants for both accessions and losses were between 22 and 25 years old.

Table 19
Age at Service Entry, RA Nurse Accessions and Losses, FY 1987
(percent)

Age at Entry (Years)	Accessions (n=535)	Losses (n=469)
18 and under	0.0	2.1
19 - 21	6.0	12.0
22 - 25	63.0	45.8
26 - 29	11.2	20.1
30 - 34	12.9	13.2
35 and over	6.9	6.8
Total	100.0	100.0
Missing	(0)	(0)

J.   Nursing Specialty

The data set contained information about specific nursing specialty in the form of primary MOS. Table 20 shows the numbers of RA nurses in each of the nursing specialties (primary MOS). Almost 50% of RA nurse accessions were clinical nurses. The majority (49.9%) of RA nurses exiting Active Duty were medical-surgical nurses.

Operating room nurses and nurse anesthetists together made up only 2.1% of accessions while they accounted for 15.1% of losses. These two nursing specialties are in great demand in the military health care environment.

Table 20
Nursing Specialty, RA Nurse Accessions and Losses, FY 1987
(percent)

Specialty	Accessions (n=535)	Losses (n=469)
Administrator	25.4	3.4
Community Health	0.0	2.6
Psychiatric	0.6	7.5
Pediatrics	0.2	8.7
Operating Room	1.5	7.2
Nurse Anesthetist	0.6	7.9
OB/Gyn	0.9	7.0
Medical-Surgical	21.7	49.9
Clinical	49.2	5.8
Total	100.0	100.0
Missing	(0)	(0)

IV. COMPARISON OF RA AND USAR NURSE PROFILES

Volume I of this series of reports (Thomas, et al. 1988) describes the characteristics of USAR nurse members, losses and accessions. A comparison of these Reserve nurses with the Active Duty nurse officers profiled in this report provides insight into the progression of a prior service Reserve nurse through his or her Army career. It also affords a more complete picture of the Army Nurse Corps than would be gleaned from either component.

A. Demographic Characteristics

Reserve nurses were older, on the average, than Active Duty Army nurses (37.5 years as compared with 33.3 years). The mean age for employed civilian nurses was somewhat greater than either group of military nurses at about 39 years. RA accessions were substantially younger than USAR accessions (26.4 years and 33.3 years, respectively). Losses from the RA and USAR were more similar in average age (34.8 years and 35.7 years, respectively).

Only 3.3% of the employed civilian registered nurses in 1984 were male while almost 23% of Reserve nurses and just over 26% of RA nurses were male. Accessions and losses for both the USAR and RA were similar to their respective memberships in gender distribution.

About the same percentage (58%) of the nurses in the RA and the USAR were married. This was somewhat lower than the percent married for employed civilian nurses (69%). RA accessions were much less likely to be married than USAR accessions (31.6% as compared with 53.9%). Losses from the RA were almost 60% married while losses from the USAR were only 55% married.

About the same percentage of RA and USAR nurses had no dependents other

than the service member (46.5% and 42.0%, respectively). RA accessions were much more likely to be without dependents (70.6%) than were USAR nurse accessions (42.0%). Losses to both groups were quite similar in this respect (42.5% and 38.5%, respectively).

USAR nurses were more likely to be minority group members than were RA nurses (whites made up 77.2% and 84.5% of these groups, respectively). Both blacks and hispanics were more strongly represented among the USAR than the RA membership. Employed civilian nurses were over 90% white. Both accessions and losses for the RA were about 84% white, while accessions and losses to the USAR were 76.5% and 83.4% white, respectively.

Both RA and USAR nurses had achieved a high educational level with 77.5% of USAR members and 94.1% of RA members holding at least a Bachelor's degree. Only 32.9% of employed civilian RNs had reached this level of education. Over 99% of RA accessions held at least a Bachelor's degree while 62.4% of entering USAR nurses had attained this degree. Almost 83% of losses to the USAR held a Bachelor's degree as did 98.5% of exiting RA nurses.

B.   Military Characteristics

The rank structure for RA and USAR nurses was ve v ilar for all paygrades above Lieutenant. Second Lieutenants made up about 16% of Active duty nurses but were almost 27% of Reserve nurse officers. First Lieutenants were more numerous (20.9%) among RA nurses than among USAR nurses (17.6%).

Accessions to both the RA and USAR were predominantly of low rank. Reserve accessions, which included many prior Active service nurses, were more likely to hold a rank about Second Lieutenant (38.2%) than were RA nurses (12.5%).

Losses to the USAR were largely from the lowest paygrades (62.1% below

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Captain) while RA nurses exiting Active service were more typically of higher rank (only 34.1% below Captain).

The distributions of RA and USAR nurses by nursing specialty (primary MOS) both show medical-surgical nursing to be the most common specialty (47.8% and 60.0%, respectively). Operating room nurses and nurse anesthetists together made up about 13% of RA and USAR memberships.

Accessions to the RA and USAR showed very different specialty distributions. Only 21.7% of entering RA nurses were medical-surgical nurses while 59.9% of USAR nurses fell in this category. Nurse anesthetists and operating room nurses together were more strongly represented among entering USAR nurses (7.3%) than among entering RA nurses (2.1%).

Losses to both components were predominantly medical-surgical nurses (49.9% for RA and 53.4% for USAR). Nurse anesthetists and operating room nurses represented 15.1% of exiting RA nurses and 15.0% of exiting USAR nurses.

Several military characteristics were available for only the RA or USAR and it was not possible to compare the two groups of nurses on the basis of these measures. These characteristics included years of service, source of commission, training category, military education, unit of assignment region, and age at service entry.

The data available for RA and USAR nurses are inadequate for a comprehensive comparison of these two groups. Many data fields, especially those for Reserve officers are characterized by inconsistent entries and missing information. A more complete personnel information system would aid in the development of recruiting and retention policy for these health care professionals who are in such great demand in both military and civilian settings.

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